

09/901, 722

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|------|---|---|------------------|---------|------------------|
| L2 | 23 | chapchikov.in. | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 13:14 |
| L8 | 2 | ("5994247").PN. | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 14:03 |
| L9 | 0 | "21625899" | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 14:04 |
| L10 | 14 | "1081406" | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 14:09 |
| L11 | 0 | "21625899" | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 14:09 |
| L12 | 0 | "1999625899" | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 14:09 |
| L13 | 14 | non-asbestos same friction same (fiber\$1 near5 length) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:07 |
| L14 | 10 | ("4324706" "4563495" "5383963" "5891933" "5942205" "5952416" "6013238" "6036938" "6251361" "6355601").PN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2005/01/13 15:01 |
| L15 | 20 | akihiro.in. same hikichi.in. | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:07 |
| L16 | 9 | mikiya.in. same haruta.in. | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:10 |
| L17 | 13 | 15 not 16 | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:23 |

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|-----|------|--|---|-----|-----|------------------|
| L18 | 15 | (("5645076") or ("4446203") or ("5866636") or ("5495922") or ("6260674") or ("4320823")).PN. | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:24 |
| L19 | 6 | 18 and fiber\$1 | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:26 |
| L20 | 1925 | (friction material) same fiber\$1 | US-PGPUB; USPAT; EPO; JPO; DERWENT | ADJ | OFF | 2005/01/13 15:27 |
| L21 | 511 | asbestos and 20 | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:31 |
| L22 | 0 | yamane.in. same "takeshi.in" | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:32 |
| L23 | 0 | yamane.in. same "takeshi.in" | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:32 |
| L24 | 222 | yamane.in. same takeshi.in. | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:32 |
| L25 | 22 | 24 and friction | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:36 |
| L26 | 2 | ("4182437").PN. | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2005/01/13 15:36 |
| L27 | 5 | ("3844800" "3891595" "3899050" "3967037" "4119591").PN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2005/01/13 15:36 |
| L28 | 7 | ("4182437").URPN. | USPAT | OR | OFF | 2005/01/13 15:40 |
| S1 | 280 | (442/148).CCLS. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2004/10/07 14:40 |
| S2 | 9 | amorphous and ((442/148).CCLS.) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:01 |

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|-----|-------|---|---|----|-----|------------------|
| S3 | 29 | silica and ((442/148).CCLS.) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:08 |
| S4 | 35 | friction and ((442/148).CCLS.) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:12 |
| S5 | 17296 | (brake near2 (pad or lining)) or (clutch near2 facing) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:12 |
| S6 | 8628 | friction and ((brake near2 (pad or lining)) or (clutch near2 facing)) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:13 |
| S7 | 3 | (friction and ((brake near2 (pad or lining)) or (clutch near2 facing))) and ((442/148).CCLS.) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:13 |
| S8 | 3 | ((442/148).CCLS.) and ((brake near2 (pad or lining)) or (clutch near2 facing)) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:13 |
| S9 | 1 | asbestor near1 (non or free) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:14 |
| S10 | 2356 | asbestos near1 (non or free) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:20 |
| S11 | 4 | ((442/148).CCLS.) and (asbestos near1 (non or free)) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:22 |
| S12 | 3 | ("4446203").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:44 |
| S13 | 3 | ("3967037" "4244994" "4320823").PN. | USPAT | OR | OFF | 2003/02/21 14:22 |
| S14 | 2 | ("4130537").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:50 |

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|-----|------|--|---|----|-----|------------------|
| S15 | 4 | ("3207623").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:51 |
| S16 | 9 | "3207623".URPN. | USPAT | OR | OFF | 2003/02/21 14:50 |
| S17 | 9828 | SiO2 and (CaO or MgO) and (Al2O3 or ZrO2) and (Na2O or K2O or FeO or Fe2O3 or BaO) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 14:52 |
| S18 | 53 | friction and (SiO2 and (CaO or MgO) and (Al2O3 or ZrO2) and (Na2O or K2O or FeO or Fe2O3 or BaO)) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:15 |
| S19 | 161 | amorphous and (SiO2 and (CaO or MgO) and (Al2O3 or ZrO2) and (Na2O or K2O or FeO or Fe2O3 or BaO)) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:15 |
| S20 | 6 | (brake or clutch) and (amorphous and (SiO2 and (CaO or MgO) and (Al2O3 or ZrO2) and (Na2O or K2O or FeO or Fe2O3 or BaO))) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:18 |
| S21 | 2651 | (428/297.4,292.1,402).CCLS. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:18 |
| S22 | 20 | ((brake near2 (pad or lining)) or (clutch near2 facing)) and ((428/297.4,292.1,402).CCLS.) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:19 |
| S23 | 0 | ((((brake near2 (pad or lining)) or (clutch near2 facing)) and ((428/297.4,292.1,402).CCLS.)) and (SiO2 and (CaO or MgO) and (Al2O3 or ZrO2) and (Na2O or K2O or FeO or Fe2O3 or BaO)) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:19 |
| S24 | 0 | ((428/297.4,292.1,402).CCLS.) and (SiO2 and (CaO or MgO) and (Al2O3 or ZrO2) and (Na2O or K2O or FeO or Fe2O3 or BaO)) | US-PGPUB; USPAT; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:19 |
| S25 | 2 | ("6475614").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2003/02/21 15:24 |
| S26 | 2 | ("5965658" "6284815").PN. | USPAT | OR | OFF | 2003/02/21 15:25 |

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|-----|---|---|---|----|-----|------------------|
| S27 | 6 | (("6260674") or ("5495922") or ("5866636")).PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2003/02/24 10:26 |
| S28 | 2 | ("6260674").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2003/09/23 14:50 |
| S29 | 2 | ("5994247").PN. | US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT | OR | OFF | 2004/10/07 14:40 |

Hit List

Family search

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| Generate OACS | | | | |

Search Results - Record(s) 1 through 2 of 2 returned.

☐ 1. Document ID: EP 1081406 A2

L2: Entry 1 of 2

File: EPAB

Mar 7, 2001

PUB-NO: EP001081406A2DOCUMENT-IDENTIFIER: EP 1081406 A2

TITLE: Non-asbestos friction materials

PUBN-DATE: March 7, 2001

INVENTOR-INFORMATION:

NAME

YAMANE, TAKESHI

COUNTRY

JP

ASSIGNEE-INFORMATION:

NAME

NISSHIN SPINNING

BBA FRICTION GMBH

COUNTRY

JP

DE

APPL-NO: EP00306460

APPL-DATE: July 28, 2000

PRIORITY-DATA: JP21625899A (July 30, 1999)

INT-CL (IPC): F16 D 69/02

EUR-CL (EPC): F16D069/02; F16D069/02

ABSTRACT:

CHG DATE=20010403 STATUS=O>&ORDF;&ORDF;&ORDF;&ORDF;A non-asbestos friction material is comprised of a molded and cured composition which includes a fibrous base, a binder, a filler, and particles of a rubber composite composed primarily of at least one fibrous substance and rubber, or of at least one fibrous substance, at least one type of hard particle and rubber. The rubber composite particles enable the fibrous substance to be uniformly dispersed and mixed without forming clumps and without segregation of the hard fibrous substance and the hard particles in the finished article. The qualities of each constituent can thus be used to full advantage to give friction materials such as automotive disk pads which have an excellent friction performance.

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|------|-------|----------|-------|--------|----------------|------|-----------|---------|----------|--------|-----|---------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Summary | Abstract | Claims | KMC | Draw De |
|------|-------|----------|-------|--------|----------------|------|-----------|---------|----------|--------|-----|---------|

☐ 2. Document ID: EP 1081406 A2, JP 2001107025 A, KR 2001049947 A, US 6451872 B1

L2: Entry 2 of 2

File: DWPI

Mar 7, 2001

DERWENT-ACC-NO: 2001-292664
DERWENT-WEEK: 200270
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TITLE: Non-asbestos friction material used for manufacture of, e.g., automotive disc pads, comprises fibrous base, binder, filler and rubber composite

INVENTOR: YAMANE, T

PATENT-ASSIGNEE:

ASSIGNEE

CODE

BBA FRICTION GMBH

BBAFN

NISSHINBO IND INC

NISN

PRIORITY-DATA: 1999JP-0216258 (July 30, 1999)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE | PAGES | MAIN-IPC |
|------------------------|--------------------|----------|-------|------------|
| <u>EP 1081406 A2</u> | March 7, 2001 | E | 010 | F16D069/02 |
| <u>JP 2001107025 A</u> | April 17, 2001 | | 010 | C09K003/14 |
| <u>KR 2001049947 A</u> | June 15, 2001 | | 000 | F16D069/02 |
| <u>US 6451872 B1</u> | September 17, 2002 | | 000 | C08J005/14 |

DESIGNATED-STATES: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL
PT RO SE SI

APPLICATION-DATA:

| PUB-NO | APPL-DATE | APPL-NO | DESCRIPTOR |
|---------------|---------------|----------------|------------|
| EP 1081406A2 | July 28, 2000 | 2000EP-0306460 | |
| JP2001107025A | July 25, 2000 | 2000JP-0223321 | |
| KR2001049947A | July 31, 2000 | 2000KR-0044221 | |
| US 6451872B1 | July 28, 2000 | 2000US-0628551 | |

INT-CL (IPC): C08 J 5/14; C08 K 7/02; C08 L 21/00; C09 K 3/14; F16 D 69/02

ABSTRACTED-PUB-NO: EP 1081406A

BASIC-ABSTRACT:

NOVELTY - The material comprises a molded and cured composition that includes: (A) a fibrous base; (B) a binder; (C) a filler; and (D) particles of a rubber composite that consists primarily of at least one hard or soft fibrous substance having a Mohs hardness below 4 and rubber, and, optionally, at least one type of hard particle having a Mohs hardness of at least 4.

DETAILED DESCRIPTION - The fibrous base (A) may be any inorganic or organic fiber commonly used in friction material, other than asbestos.

The binder (B) may be a known binder commonly used in friction materials, e.g. phenolic resins, melamine resins, etc..

The filler (C) may be any inorganic or organic material used in ordinary friction materials, e.g. molybdenum disulfide, magnesium oxide, etc..

The rubber composite particles (D) may contain a crosslinking agent and have an average particle size of 50-10,000 microns .

Preferably, the rubber composite particles are porous and have bulk density after mixing and size reduction of at most one-half the theoretical density.

Production of the composite particles involves mixing the fibrous substance, e.g. ceramic, natural mineral, glass, metal, aramid, carbon, etc., fibers, the rubber, e.g. acrylonitrile-butadiene rubber, and, optionally, the hard particles, e.g., ceramic, metal oxide, or nitride particles, at 20-200 deg. C under a pressure of 1-100 kg/cm2 for 1-30 minutes, then releasing the pressure to 20 kg/cm2 or less, and milling and mixing.

An INDEPENDENT CLAIM is given for a non-asbestos friction material based on that described above, but where the rubber composite additionally includes at least one type of hard particle having a Mohs hardness of at least 4.

USE - For braking in automobiles, large trucks, railroad cars and various types of industrial equipment.

ADVANTAGE - Counter surface attack and the amount of wear due to segregation of hard particles and hard fibrous substance within the friction material are reduced. Noise performance is improved. Reduction in the friction coefficient at high temperatures is reliably prevented. Tearing and loss of rubber during brake operation are minimized.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: NON ASBESTOS FRICTION MATERIAL MANUFACTURE AUTOMOTIVE DISC PAD
COMPRISE FIBRE BASE BIND FILL RUBBER COMPOSITE

DERWENT-CLASS: A88 L02 Q63

CPI-CODES: A12-H10; L02-F;

ENHANCED-POLYMER-INDEXING:

Polymer Index [1.1] 018 ; R00817 G0475 G0260 G0022 D01 D12 D10 D26 D51 D53 D58 D83 F12 ; R00806 G0828 G0817 D01 D02 D12 D10 D51 D54 D56 D58 D84 ; H0124*R ; H0022 H0011 ; P0328 ; P0088 ; P0124 ; P0135 Polymer Index [1.2] 018 ; P0737*R P0635 H0293 F70 D01 D18 ; S9999 S1070*R Polymer Index [1.3] 018 ; ND01 ; Q9999 Q7603*R ; Q9999 Q7614 Q7603 ; Q9999 Q9234 Q9212 ; Q9999 Q9289 Q9212 ; K9416 ; N9999 N6439 ; N9999 N6600 ; B9999 B3792 B3747 Polymer Index [2.1] 018 ; P0226 P0282*R D01 D18 F30 Polymer Index [2.2] 018 ; R00859 G1809 G1649 D01 D23 D22 D31 D45 D50 D76 D83 F19 F10 F07 ; P0259*R P0226 D01 ; H0011*R Polymer Index [2.3] 018 ; ND01 ; Q9999 Q7603*R ; Q9999 Q7614 Q7603 ; Q9999 Q9234 Q9212 ; Q9999 Q9289 Q9212 ; K9416 ; N9999 N6439 ; N9999 N6600 ; B9999 B3792 B3747 Polymer Index [2.4] 018 ; Q9999 Q6791

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2001-089829

Non-CPI Secondary Accession Numbers: N2001-209214

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|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|---------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMIC | Draw De |
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| Terms | Documents |
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| EP-1081406-\$.DID. | 2 |

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